

## Keeping and breeding *Haaniella* species successfully.

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Over the last few years there has been a great deal of interest shown by members of the PSG in the genus *Haaniella*, with many members asking for eggs or nymphs, usually to be disappointed when told there are none available.

Now, at last, they are becoming more common in captivity, thanks to our intrepid collectors such as Phil Bragg, Allan Harman, Ulrich Ziegler etc. The eggs of several species are slowly being distributed to those who want them. The following species are being bred in captivity: *H. grayi grayi*, *H. echinata*, *H. dehaani*, *H. muelleri*, with a tentative culture of *H. echinata scabra*.

Most of the *Haaniella* are large, robust species with the females rather like brown *Heteropteryx dilatata* (PSG 18). The males though are quite different from male *dilatata*, although winged, the wings are small and not capable of flight, appearing to be only for stridulating for defence and perhaps during competition for females. The females have a good array of defensive spines and are capable of drawing blood from the incautious finger. The males are some of the spikiest insects that we keep and are extremely handsome in appearance.

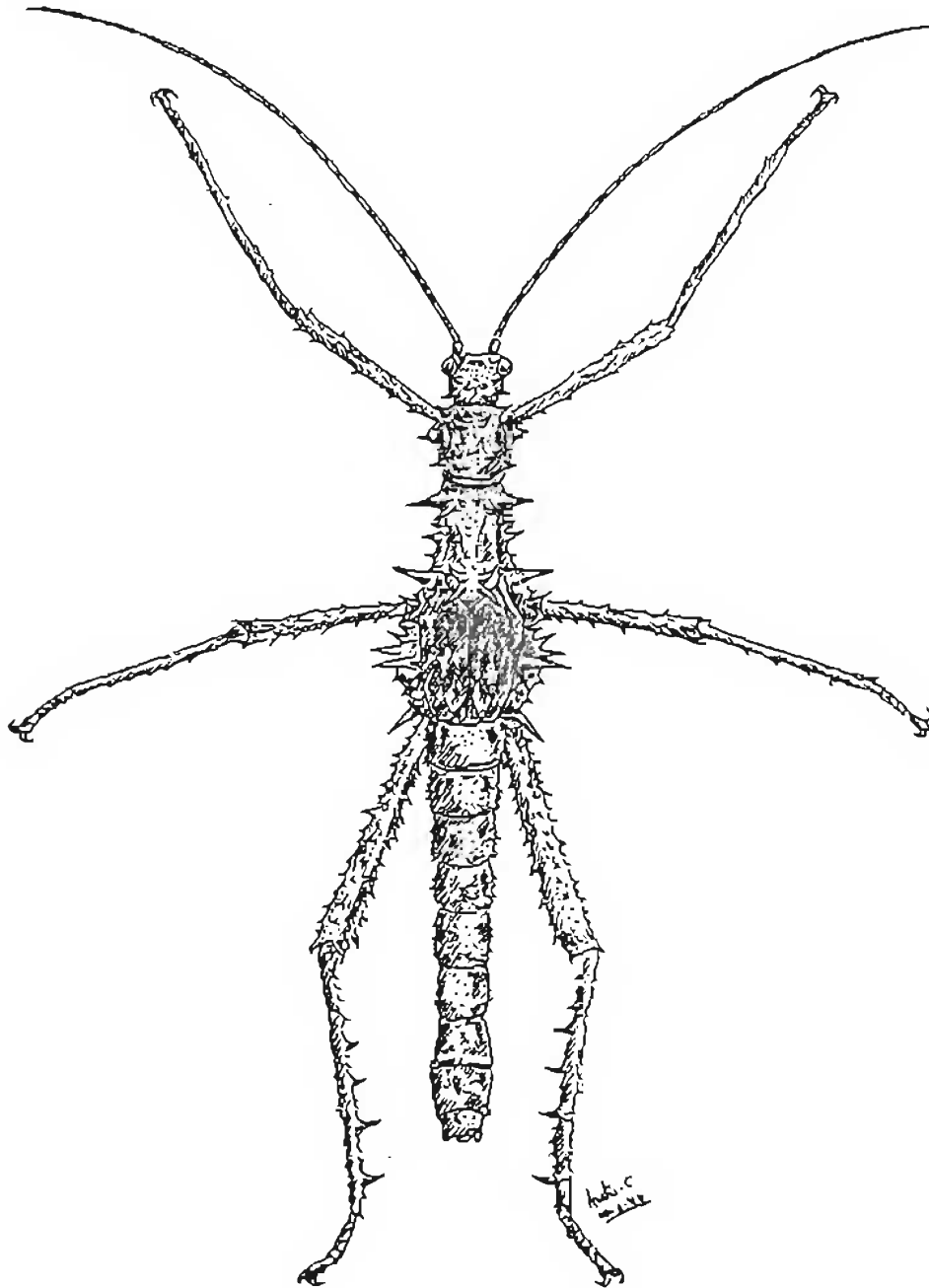
To keep the insects in good condition we must first take into account where they come from. The species which we have in culture at present are all from Borneo, with the exception of *H. muelleri* which comes from the Malay Peninsula. The sort of habitat in which we found them was warm, humid rainforest, and almost always within 100m of running water. We found them on the forest floor and up to 6m high in small trees. They could of course go much higher, but considering the obstructed view in the rain forest we wouldn't have been able to see them.

In the wild they eat a wide range of native plants and we often found adults after finding very large leaves half eaten. Female *Haaniella* spp. will stay in the vicinity of favourite food plants for a considerable amount of time. A female *H. grayi grayi*, feeding on *Rubus* sp. on Mt Serapi, was still there when we returned four weeks later.

Taking this information into account, this is the method I use to keep and breed *H. grayi grayi*, *H. dehaani* and *H. muelleri*. I use a large wooden cage, approximately 100cm long, 60cm wide and 75cm high. The temperature is maintained at around 20°C in winter and 25°C in summer by means of a flat 28W heater mat taped to the inside back of the cage. This never gets too hot and indeed the manufacturers claim that reptiles can sit safely on them for long periods. This I can bear out by often seeing *Haaniella* hanging from it, and since I've been using it I've had no deaths. In the cage is a very large hollow "log" of cork bark. This is very much appreciated by the *Haaniella* which creep inside and behind it in the daytime. Adults will occasionally stay aloft if the vegetation is very thick and nymphs will stay in the vegetation if they can crawl into withered brown leaves. Also in the cage is a standard (375mm x 130mm x 60mm) seed tray full of moist peat for the insects to lay their eggs in; I find about 90% of all eggs in the peat. The rest are on the newspaper-lined floor, often in the corners. I remove the eggs and incubate them in damp "Vermiculite", buried with just the operculum showing. I check the eggs every day for hatching and throw out any eggs which are infected with fungus.

The food plants are kept in milk bottles and in winter this is usually bramble about 1.5m long and quite thick stemmed. This gives the *Haaniella* plenty of room to climb about. They spend most

of the hours of darkness climbing and feeding, only descending when I put on their light in the morning. The light is a small 15W fluorescent tube shining from 7am to 10pm. I took great care to obtain a tube that gives out light similar to natural daylight as I thought the insects might benefit from it, but so far as I can't say with any conviction that they have.



**Figure 1.** Male *Haaniella echinata*, drawing by Austin Crompton.

Also in the cage is a plastic plant pot saucer, about 150mm diameter and 20mm deep, full of water. This I feel is essential to the well being of my *Haaniella*. The adult females drink every day, often leaving their daytime hiding places to have a drink and a good soak. The adult males often drink when they descend from the foodplant in the morning. They put their front legs in the water and often submerge their whole head and remain in that position for at least an hour. It's a good job

that they don't need their heads for breathing! Small nymphs don't seem to need the drinking pot and I assume they get enough liquid from the foodplant. The females need to drink every day when they are fully mature and laying their huge eggs. I believe the liquid content of the eggs would soon dehydrate her and result in the cessation of egg laying or in extreme cases, the death of the female.

The main reason why the *Haaniella* spp. have been so long in coming into general distribution is the extremely long life cycle. The eggs can take over 18 months to hatch and as many as 60% can fail to hatch due to fungus infections or just because they are infertile. Once the nymphs are feeding they appear to be very robust with very few losses. The few losses which do occur are mainly caused by bad skin sheds. *Haaniella grayi grayi* and *H. echinata* take about 16-18 months to become adult, and females about three more to become sexually mature and capable of laying eggs. One of the interesting things observed by myself and others is the males often try to mate with the females as soon as she completes her last moult, even when she is still hanging onto her old skin. Whether this mating could be successful I am in some doubt.

The females can live at least two years as egg laying adults and at about two eggs per week should lay about 200 eggs in her lifetime. Considering the mortality rate of the eggs, I like to hatch the eggs myself and give away pairs of nymphs at various meetings of the PSG. In this way the recipients, who in some cases have waited upwards of two years, are likely to be reasonably experienced with other species. As mentioned earlier, *Haaniella* spp. are becoming more widespread in the PSG and my waiting list is going down. If any members would like to be added to the list, please write but I warn you that it may be a very long time before you actually get your *Haaniella*.

The methods outlined above are the way I keep and breed my *Haaniella grayi grayi*, *H. dehaani*, and *H. muelleri*; I am at least moderately successful. Others approach the problems of *Haaniella* spp. in different ways and are just as successful or even more so.